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5-1, Okawacho, Kawasaki-ku, Kawasaki-shi, Kanagawa  
210-0858 (JP). **KANABARA, Eiji** [JP/JP]; c/o Corporate  
R & D Center, SHOWA DENKO K.K., 5-1, Ogimachi,  
Kawasaki-ku, Kawasaki-ski, Kanagawa 210-0867 (JP).

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(74) Agent: **OHIE, Kunihisa**; Ohie Patent Office, Horiguchi  
No. 2, Bldg. 7F, 2-6, Nihonbashi-Ningyocho 2-chome,  
Chuo-ku, Tokyo 103-0013 (JP).

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(71) Applicant (*for all designated States except US*): **SHOWA  
DENKO K.K.** [JP/JP]; 13-9, Shiba Daimon 1-chome, Mi-  
nato-ku, Tokyo 105-8518 (JP).

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(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **YANO, Kotaro**  
[JP/JP]; c/o Corporate R & D Center, SHOWA DENKO  
K.K., 5-1, Okawacho, Kawasaki-ku, Kawasaki-ski,  
Kanagawa 210-0858 (JP). **TOKI, Masaharu** [JP/JP];  
c/o Showa Denko K.K., 13-9, Shiba Daimon 1-chome,  
Minato-ku, Tokyo 105-8518 (JP). **INOUE, Hitoshi**  
[JP/JP]; c/o Corporate R & D Center, SHOWA DENKO  
K.K., 5-1, Okawacho, Kawasaki-ku, Kawakaki-shi, Kana-  
gawa 210-0858 (JP). **YOSHIDA, Tomoaki** [JP/JP];  
c/o Corportate R & D Center, SHOWA DENKO K.K.,

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ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: VAPOR GROWN CARBON FIBER, AND PRODUCTION METHOD AND USE THEREOF

(57) Abstract: A vapor grown carbon fiber, each fiber filament of the carbonfiber having a branching degree of at least 0.15 occur-  
rences/ $\mu\text{m}$  and a bulk density of 0.025 g/cm<sup>3</sup> or less and a producing method of the carbon fiber by spraying a raw material solution  
containing a carbon source and a transition metallic compound into a reaction zone and subjecting the raw material solution to ther-  
mal decomposition, which is characterized in (1) spraying the raw material solution at a spray angle of 3° to 30° and (2) feeding a  
carrier gas through at least one site other than an inlet through which the raw material solution is sprayed, and a composite material  
comprising the carbon fiber.

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According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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X	US 5 594 060 A (ALIG ROBERT L ET AL) 14 January 1997 (1997-01-14) the whole document	3,6,20, 22
X	US 2002/146562 A1 (INOUE HITOSHI ET AL) 10 October 2002 (2002-10-10) paragraphs '0032! - '35 44 47!; examples comp.1,comp.2; table 1	3,5,6
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- \*&\* document member of the same patent family

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax (+31-70) 340-3016

Authorized officer

Tarrida Torrell, J

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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